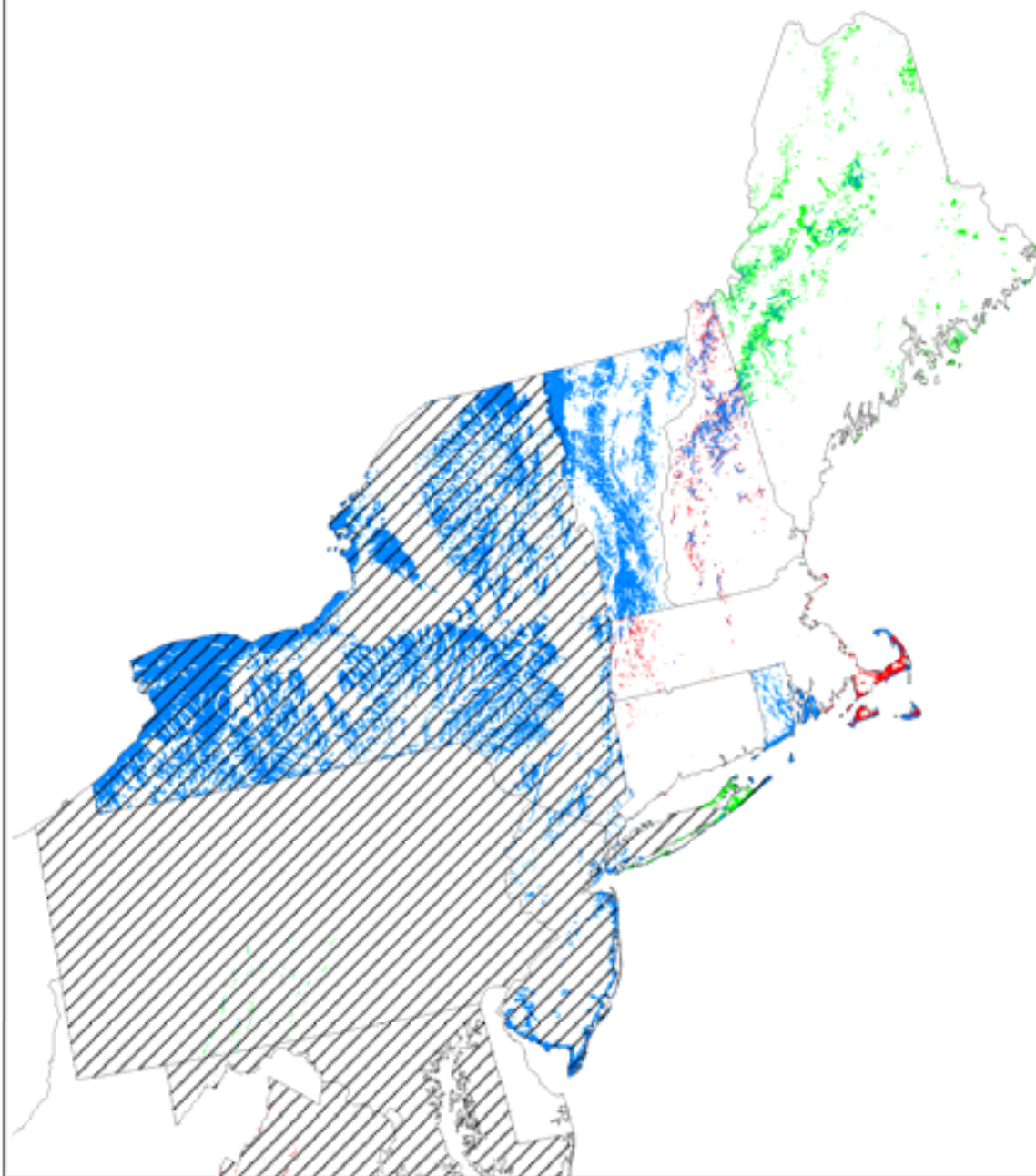


# Small Wind/PV Network Collaboration

Richard Michaud  
DOE/Boston

Trudy Forsyth  
NREL/WPA



Wind Data Source: TrueWind Solutions using their Mesomap System and historic weather data and then with the exception of New York, all other states validated with available surface data by NREL and wind energy meteorological consultants.

/// PV BTC Priorities

#### Distributed Wind

- BTC > \$2/Watt
- + Federal ITC with \$2K Cap
- + USDA Farm Bill Grant

U.S. Department of Energy  
National Renewable Energy Laboratory

# MSR/WPA Northeast pilot

- Started with BTC analysis showing good cost benefits for NE
- Link with MSR partners through peer-to-peer exchange
- Take advantage of consumers ignorance from small to large turbine – move market forward
- DWT projects influence pro-wind stance for Cape Wind

# Why MSR and WPA – natural synergy

- Solar Boston buys the RECs from
  - Hull 1
  - Portsmouth Abbey
  - Hull 2(in negotiation)
- Solar Boston sells green tags including solar aggregation (1 MW), digester gas(methane) electricity from the MWRA
- RECs from two 5 MW Low Impact Hydro Institute certified facilities(ME and VT) as well as land fill gas from Massachusetts to satisfy their green tag demands

# Why MSR and Wind – natural synergy

## Other Partnerships:

- Vermont/VEIC/ReNew Vermont Small Wind and Solar intertwined
  - Earmark is for only small wind buy-down
- NYSERDA, SBC Provider, leader in wind and solar activities in the Northeast, with grants, education, etc.
- RELI/LIPA, heavily involved in solar and wind activities
- Cape and Islands Self Reliance Wind workshops, solar workshops
- Martha's Vineyard. Same, Samso Island presentation, Udall. Etc.
- Rhode Island supports both wind and solar through SBC funds
- NH Plymouth Area Renewable Energy Initiative supports wind and solar
- Center for Ecological Solutions supports wind and solar through grants, educational efforts, etc.

# Role of MSR partners

- Grants with DOE (\$10 – 50k/year)
  - Regional/National meeting
    - Give summary of grant work at meeting – usually something innovative
  - Summary Report
- Yearly peer-to-peer exchanges
  - allow partners to learn from each other
  - develop common strategy for education and outreach
- Some partners also got SBC funds, hardware only
  - NY is exception co-funded market development
- Partnership work fit well with MSR doing the outreach/education and states co-funding hardware
  - need both activities to grow market share
  - presented a win-win for state, partner and feds



# KidWind Teacher's Workshop June 3, 2006 Pittsburgh



# KidWind

- Started by Michael Arquin – Tufts University, Wright Center for Science Education – fall of 2003
- Teachers workshops started in NE
  - Summer 2004 – 4 workshops with 85 teachers in NY, MA, ME and VT
  - 9/04 – 10/05 over 40 workshops in CO, MN, WI, NY, NC, etc.
    - One workshop in Syracuse with a tour of 40 MW Fenner windfarm
    - Workshops with National Science Teachers Association in IL and CA
  - Planned future workshops in WI,
- Commercialized wind turbine kit for classroom hands-on education – sold 600 kits 12/04 – 12/05
- Standards-based science curriculum developed for middle and high school students
- Web site – [kidwind.org](http://kidwind.org) – about 4,000 hits/day



# Examples of distributed wind (small/community wind) projects in the Northeast

*Move the wind market by  
creating visibility using  
distributed wind*

# IBEW-Dorchester, MA (near Southeast Expressway)



# IBEW Local 103 – Marty Aiken



- Fuhrlander 100 kW - Henry DuPont
- \$540,000 total project costs –  $\frac{1}{2}$  paid by MTC
- Located at IBEW training center
- Wanted to showcase wind in support of Cape Wind project – 3 years of 700 electrician jobs during installation + future O&M
- 100 kW system put in to support large projects and the jobs they represent.
- Train workers in wind technology related electrical

# Portsmouth Abbey, RI



# Portsmouth Abbey, RI

- 660 kW project located on private school.
- City thinking of public high school and one other location for similar sized turbines.
- Link to MSR....Chris Warfel, the solar champion in RI, inspected the system for the state.
- Chris administered the Block Island Grant from DOE, and inspected all small wind/solar and solar pv systems for the state.



# Hull II MA



# What we did with MSR/WPA in the NE?

- Started work with KidWind through teachers workshop & curriculum development – Tufts University
- March 2005 – initiated MA WWG through targeted small wind meeting with manufacturers and USDA
- Participated in two MSR peer-to-peer exchanges (Oct. 2005 & March 2006) in northeast region
  - Inspires natural competitive outreach work
- Attended Northeast Sustainable Energy Association building conference – sponsored by MA Technology Collaborative
- Gave a workshop with USDA's Sharon Colburn and Anne Correia – resulting in 2 out of 3 USDA grant applications from MA (total of 48 applications)



# Strategies for WPA Outreach and Education on the East Coast

- Can we convert MSR partners to WWG through small wind?
  - experienced in local & state outreach/education
  - Form Peer-to-Peer exchanges
- Hold KidWind train-the-trainer teacher workshops
  - Get small/community wind in school grounds
- Hold targeted small wind USDA workshops
- Long-term focus on development of east coast collaborative group
- Short-term work with a couple of interested states to build WWG – which states????
  - Need co-funding support